Kingston
TECHNOLOGY
Value RAM

KVR13LR9D8K4/16I

16GB (4GB 512M x 72-Bit x 4 pcs.) PC3L-10600
CL9 Registered w/Parity 240-Pin DIMM Kit

DESCRIPTION

ValueRAM's KVR13LR9D8K4/16I is a kit of four 512M x 72-bit (4GB) DDR3L-1333 CL9 SDRAM (Synchronous DRAM), low voltage, registered w/parity, 2Rx8 ECC, Intel® Compatibility Tested, memory modules, based on eighteen 256M x 8-bit FBGA components per module. Total kit capacity is 16GB. The SPD's are programmed to JEDEC standard latency DDR3-1333 timing of 9-9-9 at 1.35V and 1.5V. This 240-pin DIMM uses gold contact fingers. The electrical and mechanical specifications are as follows:
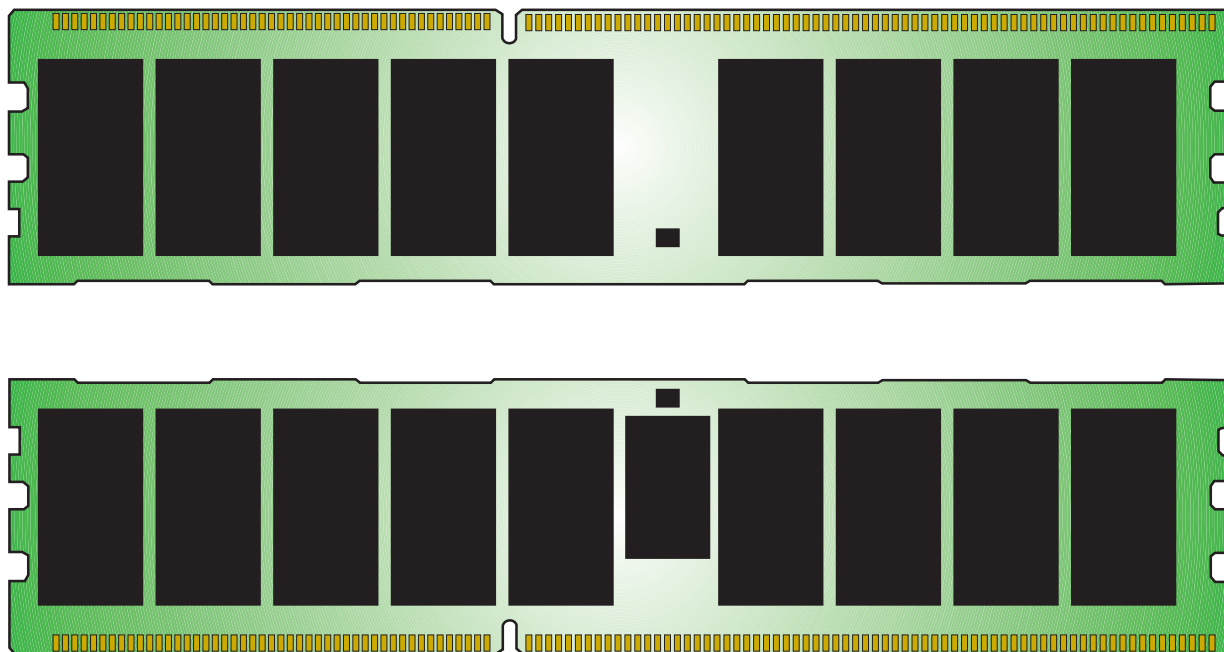
FEATURES

- JEDEC standard 1.35V (1.28V ~ 1.45V) and 1.5V (1.425V ~ 1.575V) Power Supply

- VDDQ = 1.35V (1.28V ~ 1.45V) and 1.5V (1.425V ~ 1.575V)

- 667MHz fCK for 1333Mb/sec/pin

- 8 independent internal bank

- Programmable CAS Latency: 9, 8, 7, 6

- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock

- Programmable CAS Write Latency(CWL) = 7 (DDR3-1333)

- 8-bit pre-fetch

- Burst Length: 8 (Interleave without any limit, sequential with starting address "000" only), 4 with tCCD = 4 which does not allow seamless read or write [either on the fly using A12 or MRS]

- Bi-directional Differential Data Strobe

- Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm ± 1%)

- On Die Termination using ODT pin

- On-DIMM thermal sensor (Grade B)

- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C

- Asynchronous Reset

- PCB : Height 1.180" (30.00mm), double sided component

SPECIFICATIONS

CL(IDD)	9 cycles
Row Cycle Time (tRCmin)	49.5ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	160ns (min.)
Row Active Time (tRASmin)	36ns (min.)
Maximum Operating Power	(1.35V) = 3.254 W*
	(1.50V) = 3.846 W*
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

*Power will vary depending on the SDRAM and Register/PLL used.

MODULE DIMENSIONS:

(units = millimeters)


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                                                                    R 0.65 MAX.
                                                                    TYPICAL




                                                                    CHAMFER 0.50 X 45 DEG.
                                                                    4 PLACES
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0.000
1.20
7.23
22.13
38.08
52.98
80.38
95.28
111.23
126.13
132.15
133.35

30.00
29.60x4
24.80x2
21.80x2
18.80x2
15.80x2
11.00x2
8.00x2
3.80
2.30x2
0.000

1.50 +/- 0.10

0.000
2.20
2.10

54.70

131.25
131.15